Personal Information

- Name: Dr. Roohallah Alizadehsani
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Research Experience

- Postdoctoral Research Fellow – Queensland University of Technology (01/06/2024 - Current).
- Postdoctoral Research Fellow – Deakin University (01/04/2021 – 1/6/2024).
- My research has covered a broad range of disease areas, including cardiovascular diseases, coronary artery disease, heart failure, hypertension, stroke, diabetes mellitus, obesity, chronic kidney disease, cancer, breast cancer, lung cancer, colorectal cancer, liver disease, thyroid disorders, tuberculosis, COVID-19, sepsis, Alzheimer's disease, Parkinson's disease, epilepsy, depression, anxiety disorders, sleep disorders, eye diseases, glaucoma, retinal diseases, respiratory diseases, and other clinically significant disorders.

Education

- PhD in Data Science – Deakin University, Australia (31/03/2021).
- MSc in Data Science – Sharif University of Technology, Iran.
- BSc in Data Science – Sharif University of Technology, Iran.

Fellowships and Awards

- Alfred Deakin Postdoctoral Fellowship
- Ranked 21st among more than 200,000 participants in the National B.Sc. Entrance Exam (Konkoor).
- Ranked 17th among more than 35,000 participants in the M.Sc. Entrance Exam.
- Invitation letter from Harvard University as a Visiting Scholar from April 1, 2020, through March 31, 2021.
- Gold Medal Winner and Special Award of the 41st International Exhibition of Geneva for my patent titled "The system for determining the need to Angiography for patients with symptoms of Coronary Artery Disease", March 2013, Switzerland (Iran Patent No. 77131).
- The Best Invention Prize of the 41st International Exhibition of Geneva for my patent titled "The system for determining the need to Angiography for patients with symptoms of Coronary Artery Disease", March 2013, Switzerland, granted by the Russian Federation Government.
- Top 2% Scientist in AI & Image Processing in medicine – Elsevier Global Ranking
- Awarded around €4,000 Visiting Scholarship by J. E. Purkyně University in Ústí nad Labem (UJEP), Czech Republic, supervised by Dr. Hossein Moosaei.
- Awarded a €5,000 Visiting Scholarship by the University of Granada, Spain.
- Awarded a PhD scholarship by Deakin University, Australia.
- Awarded the prestigious Alfred Deakin Postdoctoral Research Fellowship (AUD $220,000) at Deakin University, the most competitive and highly regarded postdoctoral fellowship at the institution.
- Senior Member of IEEE
- According to Scopus, 69.9% of my publications (93 documents) are among the top 25% most cited worldwide, and 70% (84 documents) are published in the top 25% of journals by CiteScore, with a Field-Weighted Citation Impact (FWCI) of 3.05.

Selected Publications and Patents

Over 240 peer-reviewed articles in AI and medical applications. The citations for each publication have been extracted from Google Scholar.

Journal Paper:

- Arabasadi, Z., **Alizadehsani, R**., Roshanzamir, M., Moosaei, H. and Yarifard, A.A., 2017. Computer aided decision making for heart disease detection using hybrid neural network-Genetic algorithm. *Computer methods and programs in biomedicine*, *141*, pp.19-26. (Citations: 609), (Impact Factor: 6.4)
- Ayoobi, N., Sharifrazi, D., **Alizadehsani, R.,** Shoeibi, A., Gorriz, J.M., Moosaei, H., Khosravi, A., Nahavandi, S., Chofreh, A.G., Goni, F.A. and Klemeš, J.J., 2021. Time series forecasting of new cases and new deaths rate for COVID-19 using deep learning methods. *Results in physics*, *27*, p.104495. (Citations: 179), (Impact Factor: 4.6)
- Sadeghi, Z., **Alizadehsani, R.,** Cifci, M.A., Kausar, S., Rehman, R., Mahanta, P., Bora, P.K., Almasri, A., Alkhawaldeh, R.S., Hussain, S. , Moosaei, H., and Alatas, B., 2024. A review of Explainable Artificial Intelligence in healthcare. *Computers and Electrical Engineering*, *118*, p.109370. (Citations: 813), (Impact Factor: 5.5)
- **Alizadehsani, R.,** Habibi, J., Hosseini, M.J., Mashayekhi, H., Boghrati, R., Ghandeharioun, A., Bahadorian, B. and Sani, Z.A., 2013. A data mining approach for diagnosis of coronary artery disease. *Computer methods and programs in biomedicine*, *111*(1), pp.52-61. (Citations: 405), (Impact Factor: 6.4)
- **Alizadehsani, R.,** Alizadeh Sani, Z., Behjati, M., Roshanzamir, Z., Hussain, S., Abedini, N., Hasanzadeh, F., Khosravi, A., Shoeibi, A., Roshanzamir, M. and Moradnejad, P., 2021. Risk factors prediction, clinical outcomes, and mortality in COVID-19 patients. *Journal of medical virology*, *93*(4), pp.2307-2320. (Citations: 217), (Impact Factor: 3.7)
- **Alizadehsani, R.,** Sharifrazi, D., Izadi, N.H., Joloudari, J.H., Shoeibi, A., Gorriz, J.M., Hussain, S., Arco, J.E., Sani, Z.A., Khozeimeh, F. and Khosravi, A., 2021. Uncertainty-aware semi-supervised method using large unlabeled and limited labeled COVID-19 data. *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)*, *17*(3s), pp.1-24. (Citations: 82), (Impact Factor: 3.1)
- **Alizadehsani, R.,** Roshanzamir, M., Hussain, S., Khosravi, A., Koohestani, A., Zangooei, M.H., Abdar, M., Beykikhoshk, A., Shoeibi, A., Zare, A. and Panahiazar, M., 2021. Handling of uncertainty in medical data using machine learning and probability theory techniques: A review of 30 years (1991–2020). *Annals of Operations Research*, pp.1-42. (Citations: 215), (Impact Factor: 4.1)
- **Alizadehsani, R.,** Roshanzamir, M., Abdar, M., Beykikhoshk, A., Khosravi, A., Panahiazar, M., Koohestani, A., Khozeimeh, F., Nahavandi, S. and Sarrafzadegan, N., 2019. A database for using machine learning and data mining techniques for coronary artery disease diagnosis. *Scientific data*, *6*(1), p.227. (Citations: 125) (Impact Factor: 7.2)
- Nasarian, E., **Alizadehsani, R.**, Acharya, U.R. and Tsui, K.L., 2024. Designing interpretable ML system to enhance trust in healthcare: A systematic review to proposed responsible clinician-AI-collaboration framework. *Information Fusion*, p.102412. (Citations: 287), (Impact Factor: 17.4)
- **Alizadehsani, R.,** Zangooei, M.H., Hosseini, M.J., Habibi, J., Khosravi, A., Roshanzamir, M., Khozeimeh, F., Sarrafzadegan, N. and Nahavandi, S., 2016. Coronary artery disease detection using computational intelligence methods. *Knowledge-Based Systems*, *109*, pp.187-197. (Citations: 178), (Impact Factor: 8)
- Sharifrazi, D., **Alizadehsani, R.**, Roshanzamir, M., Joloudari, J.H., Shoeibi, A., Jafari, M., Hussain, S., Sani, Z.A., Hasanzadeh, F., Khozeimeh, F. and Khosravi, A., 2021. Fusion of convolution neural network, support vector machine and Sobel filter for accurate detection of COVID-19 patients using X-ray images. *Biomedical Signal Processing and Control*, *68*, p.102622. (Citations: 217), (Impact Factor: 5.7)
- Jafarizadeh, A., Maleki, S.F., Pouya, P., Sobhi, N., Abdollahi, M., Pedrammehr, S., Lim, C.P., Asadi, H., **Alizadehsani, R.**, Tan, R.S. and Islam, S.M.S., 2025. Current

and future roles of artificial intelligence in retinopathy of prematurity. *Artificial Intelligence Review*, *58*(6), pp.1-55. (Citations: 32), (Impact Factor: 18.8)

- Kakhi, K., Asgharnezhad, H., Khosravi, A., **Alizadehsani, R.** and Acharya, U.R., 2025. A Transfer Learning-based Approach for Fatigue Detection through the Fusion of Physiological Signals. *IEEE Sensors Journal*. (Citations: 4), (Impact Factor: 4.5)
- Khozeimeh, F., **Alizadehsani, R.**, Roshanzamir, M., Khosravi, A., Layegh, P. and Nahavandi, S., 2017. An expert system for selecting wart treatment method. *Computers in biology and medicine*, *81*, pp.167-175. (Citations: 226), (Impact Factor: 6.3)
- Khozeimeh, F., Sharifrazi, D., Izadi, N.H., Joloudari, J.H., Shoeibi, A., **Alizadehsani, R.**, Gorriz, J.M., Hussain, S., Sani, Z.A., Moosaei, H. and Khosravi, A., 2021. Combining a convolutional neural network with autoencoders to predict the survival chance of COVID-19 patients. *Scientific Reports*, *11*(1), p.15343. (Citations: 125), (Impact Factor: 4.9)
- Hansun, S., Argha, A., Alinejad-Rokny, H., **Alizadehsani, R.**, Gorriz, J.M., Liaw, S.T., Celler, B.G. and Marks, G.B., 2024. A New Ensemble Transfer Learning Approach With Rejection Mechanism for Tuberculosis Disease Detection. *IEEE Transactions on Radiation and Plasma Medical Sciences*. (Citations: 19), (Impact Factor: 3.8)

Conference Paper:

- **Alizadehsani, R.**, Hosseini, M.J., Sani, Z.A., Ghandeharioun, A. and Boghrati, R., 2012, December. Diagnosis of coronary artery disease using cost-sensitive algorithms. In *2012 IEEE 12th international conference on data mining workshops* (ICDM)(pp. 9-16). (Citations: 106)

Patents:

- The US patent named "The system for determining the need to Angiography for patients with symptoms of Coronary Artery Disease", Patent number 20150370996, Publication date 2015/12/24, Application number 14/312648.
- The patent named "The system for determining stenosis of LAD, LCX, RCA arteries", 2013, Iran (Iran Patent No. 80742).
- The patent named "A system for diagnosing hypertrophic cardiomyopathy using deep learning techniques", 2023, Deutsches patents.
- The patent named "A Convolutional Neural Network System for Coronary Artery Disease Diagnosis", 2022, Republic of South Africa patents.

International Collaborations

- 91.7% of my publications are co-authored with researchers from other countries or regions, including collaborations with researchers from Harvard, Stanford, Imperial College London, MIT, the University of British Columbia, and Trinity College Dublin, as well as joint publications with IEEE Fellows and leading global experts.

Editorial and Review Activities

- Senior Editor – Expert Systems with Applications
- Guest Editor for IEEE Journal of Biomedical and Health Informatics
- Reviewer for: Nature, Lancet, ACM Computing Surveys, Information Fusion, JAMA, Journal of the American College of Cardiology (JACC), JACC: Cardiovascular Interventions, IEEE Transactions journals, and other high-quality journals.

Research Grants and Projects

- Co-investigator in the project titled 'An intelligent online platform to predict adverse outcomes from cancer-related malnutrition using the GLIM criteria' funded by Medical Nutrition International Industry (MNI), Nov 2021 – Oct 2023 (Australia). Total grant: $46,849. Collaborators included Kiss N, Khosravi A, Alizadehsani R, Steer B, Schueren MDVD, and others.

Publicly Available Datasets

- Released several well-annotated medical datasets widely used by researchers worldwide.
- Z-Alizadeh Sani Dataset – A comprehensive dataset for cardiovascular disease analysis. Available at: https://archive.ics.uci.edu/dataset/412/z+alizadeh+sani
- Extension of Z-Alizadeh Sani Dataset – Additional features enhancing predictive capacity. Available at: https://archive.ics.uci.edu/dataset/411/extention+of+z+alizadeh+sani+dataset
- Myocarditis Dataset – A labeled clinical dataset for myocarditis research. Available at: https://www.kaggle.com/datasets/danialsharifrazi/myocarditis-dataset/data
- Cryotherapy Dataset – Clinical data for cryotherapy outcome prediction. Available at: https://archive.ics.uci.edu/dataset/429/cryotherapy+dataset
- Immunotherapy Dataset – Records related to immunotherapy treatments. Available at: https://archive.ics.uci.edu/dataset/428/immunotherapy+dataset
- Hypertrophic Cardiomyopathy Dataset – Comprehensive dataset for HCM diagnosis. Available at: https://www.kaggle.com/datasets/danialsharifrazi/hypertrophic-cardiomyopathy-dataset

Teaching Experience

I taught courses in:

- Biostatistics
- Biomedical Signal Processing
- AI for Health Data

at Deakin University.

Online Profiles and Research Metrics

- ORCID: https://orcid.org/0000-0003-0898-5054
- Scopus: https://www.scopus.com/authid/detail.uri?authorId=55328861400
- Web of Science: https://www.webofscience.com/wos/author/record/HLP-8160-2023
- Google Scholar Citations: h-index: 60, Citations: 14239
- Scopus h-index: 51 | WOS h-index: 40
- Personal Website: https://scholar.google.com/citations?hl=en&user=SZxPHPAAAAAJ&view_op=list_works&sortby=pubdate

Research Interests

- My research has covered a broad range of disease areas, including cardiovascular diseases, coronary artery disease, heart failure, hypertension, stroke, diabetes mellitus, obesity, chronic kidney disease, cancer, breast cancer, lung cancer, colorectal cancer, liver disease, thyroid disorders, tuberculosis, COVID-19, sepsis, Alzheimer's disease, Parkinson's disease, epilepsy, depression, anxiety disorders, sleep disorders, eye diseases, glaucoma, retinal diseases, respiratory diseases, and other clinically significant disorders.
- AI in healthcare
- Deep learning for medical image and signal analysis
- Biostatistics

References

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